LISTING OF CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

1.(Currently Amended) A method for processing fibre channel frames, comprising:

(a) providing a plurality of virtual lanes to a fibre channel switch element having a plurality of ports, each of the virtual lane configured to transmit one or more frames between a source and a destination;

(b) receiving a fibre channel frame at a receive segment of one of the plurality of ports of the fibre channel switch element;

(c) determining a hop count for the frame based on a destination identifier value (D_ID) included in a header of the fibre channel frame at the receive segment, with a hop count value indicative of a frame destined for another port of the fibre channel switch element;

(d) assigning a virtual lane for the frame based on the determined hop count at the receive segment;

(e) modifying the assigned virtual lane at the transmit segment of one of the plurality of ports of the fibre channel switch element if the assigned virtual lane by the receive segment is not indicative of a frame destined for another port of the fibre channel switch element, and if the assigned virtual lane is indicative of a frame destined for another port of the fibre channel switch element , no virtual lane is assigned to the frame at the transmit segment; ~~wherein if the frame is destined for another port of the fibre channel element, no virtual lane is assigned~~

(e) determining if the assigned virtual lane at the transmit segment has available credit to transmit the fibre channel frame; and

(f) transmitting the fibre channel frame using the assigned virtual lane at the transmit segment, if credit is available.

2.(Currently Amended) The method of Claim 1, further comprising:

incrementing a counter value for counting available credit for the assigned virtual lane at the transmit segment, if the fibre channel frame is sent using the assigned virtual lane.

3.(Currently Amended) The method of Claim 1, wherein the assigned virtual lane at the transmit segment has a programmed maximum credit count.

4.(Currently Amended) The method of Claim 1, wherein if all credit for the assigned virtual lane at the transmit segment has been used, then a next virtual lane is selected with non-zero credit.

5.(Currently Amended) A method for processing fibre channel frames using a fibre channel switch element having a plurality of ports, each port having a receive segment and a transmit segment, comprising:

(a) providing a plurality of virtual lanes to the fibre channel switch element, each of the virtual lanes configured to transmit one or more fibre channel frames between a source and a destination;

(b) receiving a fibre channel frame at a receive segment of one of the plurality of ports of the fibre channel switch element;

(c) determining a hop count for the fibre channel frame at the receive segment, based on a destination identifier value (D_ID) included in a header of the fibre channel frame, with a hop count value indicative of a frame destined for another port of the fibre channel switch element;

(d) assigning a virtual lane to the received fibre channel frame at the receive segment, based on the determined hop count for the frame; [[and]]

(e) sending a primitive to a transmit segment with the assigned virtual lane to transmit the fibre channel frame to a destination; and

(f) modifying the assigned virtual lane at the transmit segment if the assigned virtual lane by the receive segment is not indicative of a frame destined for another port of the fibre channel switch element, , and if the assigned virtual lane is indicative of a frame destined for another port of the fibre channel switch element , no virtual lane is assigned at the transmit segment.

6.(Previously Presented) The method of Claim 5, further comprising:

~~assigning a virtual lane at the transmit segment based on the hop count of the fibre channel frame; and~~

determining if credit is available for the assigned virtual lane at the transmit segment to send the fibre channel frame using the assigned virtual lane.

7.(Previously Presented) The method of Claim 6, wherein a credit count for the assigned virtual lane is maintained by a counter and the assigned virtual lane has a maximum credit count.

8. (Previously Presented) The method of Claim 5, wherein a counter value is decremented after the primitive is received by the transmit segment.

9.(Cancelled)

10. (Previously Presented) The method of Claim 6, wherein the assigned virtual lane value at the transmit segment is less than the assigned virtual lane in the receive segment.

11. (Currently Amended) A system for processing fibre channel frames, comprising:

a fibre channel switch element having a plurality of ports, wherein each port includes a receive segment for receiving fibre channel frames and a transmit segment for transmitting fibre channel frames;

a plurality of virtual lanes for the fibre channel switch element, each of the plurality of virtual lanes configured to transmit one or more fibre channel frames between a source and a destination; and

a look up table to assign a virtual lane to a fibre channel frame received at the receive segment of a port from among the plurality of ports; wherein the virtual lane is assigned based on a hop count, and the hop count is based on a destination identifier value (D_ID) included in a header of the received fibre channel frame, with a hop count value indicative of a frame destined for another port of the fibre channel switch element;

wherein after the virtual lane is assigned based on the hop count value by the receive segment, the receive segment sends a primitive to a transmit segment, the primitive including information regarding the assigned virtual lane; [[and]]

wherein the transmit segment modifies the assigned virtual lane so as to assign a virtual lane to fibre channel frame if the assigned virtual lane is different than the value indicative of a frame destined for another port of the fibre channel switch element, , and if the assigned virtual lane is indicative of a frame destined for another port of the fibre channel switch element, no virtual lane is assigned at the transmit segment; and

wherein the transmit segment includes a credit control module that determines if the assigned virtual lane can transmit a frame based on available credit.

12. (Previously Presented) The system of Claim 11, wherein the credit control module increments a credit count for the assigned virtual lane if the fibre channel frame is transmitted from the assigned virtual lane.

13. (Previously Presented) The system of Claim 11, wherein the credit control module decrements a credit count for the assigned virtual lane if a VC_RDY primitive is received.

14. (Previously Presented) The system of Claim 11, wherein the credit control module maintains a maximum count for every virtual lane used for transmitting frames.

15. (Previously Presented) The system of Claim 12, wherein the credit control module uses an increment selector to increment credit count.

16. (Previously Presented) The system of Claim 13, wherein the credit control module uses a decrement selector to decrease the credit count.

17. (Previously Presented) The system of Claim 11, wherein the credit control module uses compare logic to compare available credit for the assigned virtual lane at any given time with a programmed maximum credit value for the assigned virtual lane.

18. (Currently Amended) A fibre channel fabric switch element for processing fibre channel frames, comprising:

a plurality of ports for receiving and transmitting fibre channel frames, wherein each port includes a receive segment for receiving fibre channel frames and a transmit segment for transmitting fibre channel frames;

a plurality of virtual lanes for the fibre channel switch element, each of the plurality of virtual lanes configured to transmit one or more fibre channel frames between a source and a destination; and

a look up table to assign a virtual lane to a fibre channel frame received at the receive segment of a port from among the plurality of ports; wherein the virtual lane is assigned based on a hop count, [[and]] the hop count is based on a destination identifier value (D_ID) included in a header of the received fibre channel frame, with a hop count value indicative of a frame destined for another port of the fibre channel switch element;

wherein after the virtual lane is assigned based on the hop count, the receive segment sends a primitive to a transmit segment, the primitive including information regarding the assigned virtual lane;

wherein the transmit segment modifies the assigned virtual lane so as to assign a virtual lane to fibre channel frame if the hop count value is different than the value indicative of a frame destined for another port of the fibre channel switch element, , and if the assigned virtual lane is indicative of a frame destined for another port of the fibre channel switch element, no virtual lane is assigned at the transmit segment; and

wherein the transmit segment includes a credit control module that determines if the assigned virtual lane can transmit a frame based on available credit.

19. (Previously Presented) The switch element of Claim 18, wherein the credit control module increments a credit count for the assigned virtual lane if the fibre channel frame is transmitted from the assigned virtual lane.

20. (Previously Presented) The switch element of Claim 18, wherein the credit control module decrements a credit count for the assigned virtual lane if a VC_RDY primitive is received.

21. (Previously Presented) The switch element of Claim 18, wherein the credit control module maintains a maximum count for every virtual lane used for transmitting frames.

22. (Previously Presented) The switch element of Claim 19, wherein the credit control module uses an increment selector to increment credit count.

23. (Previously Presented) The switch element of Claim 20, wherein the credit control module uses a decrement selector to decrease the credit count.

24. (Previously Presented) The switch element of Claim 18, wherein the credit control module uses compare logic to compare available credit for the assigned virtual lane at any given time with a programmed maximum credit value for the assigned virtual lane.

25. (Cancelled)

26. (Cancelled)

27. (Cancelled)

28. (Cancelled)

29. (New) The method of Claim 1, wherein the hop count value indicative of a frame destined for another port of the fibre channel switch element is zero.

30. (New) The method of Claim 5, wherein the hop count value indicative of a frame destined for another port of the fibre channel switch element is zero.

31. (New) The system of Claim 11, wherein the hop count value indicative of a frame destined for another port of the fibre channel switch element is zero.

32. (New) The switch element of Claim 18, wherein the hop count value indicative of a frame destined for another port of the fibre channel switch element is zero.